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AUTHOR	Cronin-Jones, Linda; Penwell, Rebecca; Hakverdi, Meral; Cline, Shannon; Johnson, Courtney; Scales, Ingrid
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ABSTRACT

This research investigated the status of environmental education (EE) in private American and international middle and high schools throughout Latin America and the Caribbean. The study population consisted of all 50 dues-paying member schools in the Association of American Schools of Central America, Columbia-Caribbean, and Mexico (the Tri-Association). Members include 17 schools in Mexico; 8 schools in Columbia; 4 schools each in Costa Rica, Guatemala, and the Dominican Republic; 3 schools in Jamaica; 2 schools each in El Salvador, Honduras, and Venezuela; and 1 school each in Nicaragua, Haiti, Ecuador, and Panama. Results of the survey indicated that even in the best situations throughout Latin America, EE is being hindered by a lack of available quality regional EE curriculum materials, lack of access to teaching materials, and widespread teacher misconceptions about EE infusion and the definition of EE. Findings strongly support the need for quality regional EE curriculum development and ongoing teacher training in Latin American schools. Studies involving 7-12 teachers in the United States yielded similar results. Teachers' perceptions of important environmental issues differed from what the community and students considered important, but the teachers' perceptions were all compatible with the EE goals and objectives set forth by the United National Environmental Programme. (Contains 29 references.) (Author/SM)

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The Status of Environmental Education in Latin American Middle and High Schools

Linda Cronin-Jones, Rebecca Penwell, Meral Hakverdi,

Shannon Cline, Courtney Johnson, and Ingrid Scales

School of Teaching and Learning

University of Florida

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Abstract

This research was commissioned by the U.S. Department of State, Office of Overseas Schools and was designed to determine the status of environmental education in private American and International middle and high schools throughout Latin America and the Caribbean. The study population consisted of all 50 dues-paying member schools in the Association of American Schools of Central America, Colombia-Caribbean and Mexico (also known as the Tri-Association). Members include 17 schools in Mexico, eight schools in Colombia, four schools each in Costa Rica, Guatemala, and the Dominican Republic, three schools in Jamaica, two schools each in El Salvador, Honduras, and Venezuela, and one school each in Nicaragua, Haiti, Ecuador, and Panama. Results of the survey indicated that even in the best situations throughout Latin America, EE is being hindered by a lack of available quality regional environmental education curricula, a lack of access to teaching materials, and widespread teacher misconceptions about EE infusion and the definition of EE. The findings of this study strongly support the need for quality regional EE curriculum development and ongoing teacher training in Latin American Schools. Studies involving 7-12 teachers in the United States yielded similar results. Teachers' perceptions of important environmental issues differed from what the community and students considered important, but the teachers' perceptions were all compatible with the EE goals and objectives set forth by the United National Environmental Programme (UNEP).

Introduction

Like most other developing regions of the world, the need for comprehensive environmental education (EE) programs in Latin America is significant. The growth rate of the human population in Latin America increases approximately three percent each year and is exacerbated by the fact that more than 50% of its population is under the age of 15. Adding fuel to the fire is the fact that four of the 10 most populated cities in the world (each containing more than 10 million people) are in Latin America (Marshall, 1993).

During the next three decades, over 90% of the world's human population growth will be in developing countries in Africa, Asia, and Latin America (Kidron & Segal, 1991). Ironically, these areas will be the least equipped to handle such population increases due to their resource and economic deficiencies. Unfortunately, these countries possess a great biological diversity of flora and fauna and the last intact remnants of unique, fragile ecosystems such as tropical rainforests, coral reefs, sea grass beds, and mangrove forests. Therefore, comprehensive environmental education programs must be developed to target developing regions such as Latin America to combat the consequences of their high rate of population growth and resulting environmental degradation.

To ensure the success of new K-12 environmental education programs in any region of the world, assessment surveys should be conducted first to determine the needs and perceptions of major stakeholders (teachers and students). Thus, it was the intent of this research to identify limitations, concerns, barriers, and interests of those who would use EE curricula in Latin America if they were developed.

History of the International Environmental Education Movement

During the 1960's, numerous highly visible environmental problems emerged throughout the world. Issues such as pollution of air and water, the dumping of toxic wastes, widespread habitat loss, and the endangerment of a number of different species around the world laid the groundwork for the emergence of the "environmental" movement of the1970's. For the first time, attention to environmental issues transcended political boundaries and focused on global concerns.

At the United Nations Conference on the Human Environment in Stockholm in 1972, delegates from all over the world worked together to make recommendations for solving the world's mounting environmental problems. Recommendation #96 called for EE to be developed in an effort to combat the world's emerging environmental problems. It also stated that EE should cover a broad base and must be related to the guidelines outlined in the United Nations Declaration on the New International Economic Order (UNEP, 1975).

In 1975, the United Nations Educational, Scientific, and Cultural Organization (UNESCO) established the International Environmental Education Program (IEEP) to implement the environmental initiatives that are coordinated by the United National Environmental Programme (UNEP) (WRI, IUCN, UNEP, FAO, UNESCO, 1992). In 1976, UNESCO sponsored an international workshop in Belgrade. Representatives from 65 countries attended to review research in the field of environmental education in an effort to develop a set of recommendations for environmental education programs. Six regional seminars followed as a forum to adopt national and regional policies for environmental education. Latin America (including Mexico, Central America, South America, and the Caribbean) represented one of the regions.

Another intergovernmental conference on environmental education was held in Tbilisi in 1977. At the conference 340 delegates from 65 nations attended and approved the definition, aims, and goals of environmental education, which have served as the guide for the development and implementation of international environmental education programs for the past 20 years. The guide was reaffirmed and revised in a 1987 delegation meeting (UNESCO, 1992). The revised declaration included a major component stressing the need for development of national environmental education policies, as well as appropriate curricula and teaching materials to implement environmental education (UNESCO, 1977).

To celebrate the 20th anniversary of the Tbilisi Doctrine and to promote education for sustainability, an international conference was held in Thessaloniki, Greece in December, 1997. The result of the conference was the Thessaloniki Declaration, which set the stage for education for sustainability and all but eliminated the term environmental education. The document listed actions to promote education for sustainability such as: creating action plans for formal education, funneling more money into public education, and changing and improving the way teachers are trained (Knapp, 2000). This doctrine further justified the need for more environmental education research in developing regions of the world, including Latin America.

Since the birth of its definition (IUCN, 1970) and the various international, national and regional meetings that followed, environmental education has been identified as a lifelong process aimed at developing the understanding, skills, attitudes, and values necessary for citizens to acquire a pro-environmental ethic (Pace, 1997). The recommendations, with respect to environmental education, of the international conference at Tbilisi have been acknowledged worldwide (UNESCO, 1980). Some of these recommendations include stipulations that ethical, social, cultural, and economic dimensions play a part in determining the approach to a better use

of natural resources. Environmental education experts also agree that effective efforts to improve EE must include the development of national environmental education legislation and polices. The environmental education community also agrees that environmental education should be incorporated into the educational systems of all countries through strategies based not only on experience, but also on documented research and evaluation (UNESCO, 1980). Unfortunately, it appears that most of these recommendations have been ignored in developing regions, such as Latin America.

The Belgrade Charter and the Tbilisi Declaration of 1977 laid the foundation for the emergence of environmental education as an integral part of the K-12 curriculum. Part of the problem in environmental education curriculum development has been that curriculum developers are faced with the difficult task of translating the general goals of developing environmental awareness, attitudes, and skills from the Belgrade Charter and the Tbilisi Declaration into sound instructional practice. This has led to guesswork in the development of environmental education curricula (Hungerford, Peyton, & Wilke, 1980).

Summary of Environmental Education in the United States

If environmental education does exist at all in public schools in the United States, it is definitely not well organized, and there is much more emphasis on the knowledge aspect of the environment than there is on teaching students how to solve environmental problems. The curriculum that is used to teach environmental education, if one is used at all, often does not pay attention to the stated objectives and characteristics of sound environmental education curricula (Ramsey, Hungerford, & Volk, 1992). Environmental education must follow the continuum from awareness to action because students must learn how to take action to solve environmental problems (Hudson, 2001).

In U.S. schools that are implementing environmental education, it is taught within the context of science classes and is not being integrated into all subjects across the curriculum as has been suggested (Knapp, 2000). A 1996 study reported that less than half of all states require environmental education to be taught in the K-12 curriculum (Holtz, 1996). There is some good news about the status of environmental education in the United States. A recent national survey indicated that states are moving closer to having more comprehensive environmental education programs than they did in the past (Ruskey, Wilke, & Beasley, 2001).

Teacher Training

It is important that teachers receive preservice training and follow up inservice training for the successful implementation of EE in schools (Plevyak, Bendixen-Noe, Henderson, Roth, & Wilke, 2001). Unfortunately, few states have teacher preparation programs in EE and if they do, they are not institutionalized, do not meet the needs of preservice teachers, are only incorporated in science methods classes, and do not address all of the goals of EE, which stress the continuum of awareness to action (McKeown-Ice, 2000). Sadly, there is even less EE inservice training than preservice training (Plevyak, et. al., 2001).

To significantly improve the quality of EE in U.S. schools, more inservice EE opportunities should be provided for teachers. Environmental education professional development should be promoted locally, not nationally, be interdisciplinary in nature to attract all teachers, not just science teachers, and focus on EE pedagogy and action strategies, not just knowledge (Wade, 1996). Research has shown that the amount of time teachers spend teaching EE increases with the amount of preservice and inservice training they receive (Knapp, 2000). Teachers with environmental education training also feel more confident to teach environmental topics, and give less credence to the logistical barriers reported by teachers in other studies

(Simmons, 1999). Therefore, the bottom line is that teachers need more preservice and inservice EE training if they are going to begin to incorporate EE into their teaching (Smith-Sebasto & Smith, 1997).

EE Programs and Curricula

Regarding available EE programs and curricula, the EE programs and curricula that do exist consist mostly of nationally developed resource books for teachers, in which EE is viewed as a component of the science curriculum rather than an interdisciplinary unifying curriculum focus. The EE activities in these materials focus more on content knowledge than on action strategies, do not include a broad range of teaching/learning approaches, and do not adequately address the educational priorities or concerns of states and local school districts. Most EE programs in the U.S. are managed by natural resource agencies, not state education agencies, which lack the money and staff to develop adequate EE programs and materials (Wade, 1996).

Teacher Perceptions of EE

In a significant study by Ham and Sewing in 1988, U.S. teachers identified numerous barriers limiting their implementation of EE curricula and activities. The most significant barriers reported include: lack of time, limited access to instructional materials, inadequate teacher training, confusion about what constitutes environmental education, and fear of teaching anything that might be considered controversial. Results of studies such as these indicate that EE curriculum developers need to consider the barriers many teachers encounter when they try to implement EE. Some teachers feel that EE is science education and thus, does not have an interdisciplinary focus. Most EE is not action-oriented because most teachers feel they do not have permission to address controversial topics or encourage particular behaviors.

Research indicates that teachers involved in environmental education do so out of their personal concern for protecting the environment, not because they have received EE training or have extensive knowledge of EE content and pedagogy. These teachers feel that if they expose students to topics such as recycling and composting, that exposure will be enough to promote changes in their students' environmental attitudes and behavior. According to EE research, however, exposing children to such activities is not enough to change their attitudes and behavior concerning the environment (Robertson & Krugly-Smolska, 1997).

Summary of Environmental Education in Latin America and the Caribbean

Previously, environmental education models and curricula have simply been transferred from the United States and implemented overseas in an attempt to promote environmental education in developing countries. Unfortunately, this approach has not been successful and has actually slowed the process of environmental education curriculum development and implementation in Latin America. In Latin America, adopting curricula from developed regions, such as the United States is often unsuccessful because teachers in Latin America do not have the same opportunities and access as teachers in the U.S such as: opportunities for higher education and inservice training, teaching only one grade per year, and access to necessary supplies for implementing EE activities (Ham & Castillo, 1990).

According to a 1994 study conducted in Latin America and the Caribbean, environmental education in the region is beginning to take hold. Nine of the 15 countries participating in the study had a working definition of EE in their curricula, and either have, or are creating, a national plan for environmental education. But, when implementing EE in the classroom, most of the countries reported equating environmental education with science instruction (Arias-La Forgia, 1994).

There are high quality EE curricula already available in Latin America and the Caribbean, but the countries in this region have no mechanisms for disseminating and exchanging these materials. Teachers in Latin America and the Caribbean do not receive much formal training in environmental education, do not have opportunities to interact at national or regional educational conferences, and most school-based environmental education programs are run by non-governmental organizations rather than educational agencies (Arias-La Forgia, 1994).

Environmental education is not a high priority for Caribbean countries. Any EE that does exist is supported by non-governmental organizations, and thus, is unorganized. The governments of many Caribbean countries are aware of the role environmental education can play in fulfilling the goal of environmental protection, but EE policies that do exist have not been implemented or funded (Bynoe & Hale, 1997). These countries face the dilemma of promoting environmental protection while simultaneously contributing to environmental destruction due to the fact that their economies depend on the use of their natural resources as a means to alleviate widespread poverty. To achieve sustainability, regional environmental action plans and an environmentally knowledgeable populace are needed. But, Caribbean governments have not implemented any resource management plans, and the residents of the Caribbean have limited knowledge of how they contribute to, and can eliminate, environmental problems.

The implementation of EE in the Caribbean has faced barriers similar to those reported by U.S. teachers such as: lack of training, resources, materials and funding, and the low priority given to EE. National Environmental Action Plans have been created by many countries in the Caribbean to promote environmental awareness. Bynoe and Hale assessed these action plans in a 1997 study and found that most did have provisions for public environmental awareness and for formal and non-formal EE instruction, but no country had a budget for EE implementation.

Five of the eight countries in the Bynoe and Hale study included provisions for EE teacher training, but few mentioned any link between environmental education and economic or political issues. Caribbean governments recognize the importance of environmental education in environmental protection, but do not have in place the needed provisions to implement their EE policies. Environmental education must become a high priority for policy makers to create a budget for EE and to pass legislation to promote the implementation of EE policies (Bynoe & Hale, 1997; Houstoun, 1998).

As these studies have shown, many countries in Latin America and the Caribbean are moving in the right direction toward the inclusion of environmental education in K-12 formal education, but none of them have achieved this goal. Most countries in this region face similar barriers including: a lack of teacher input into the development of EE materials, a lack of preservice and inservice teacher training in EE pedagogy, a lack of appropriate EE resources and materials, a lack of curricular time for EE, a lack of national EE polices, legislation, and governmental support, lack of funding for EE, the fact that standardized tests are driving the curriculum, a perception that EE is seen as science education and not interdisciplinary, and a focus on EE knowledge with little focus on EE attitudes and actions. Without the infrastructure and national support for the implementation of EE and without properly trained teachers equipped with quality EE resources and materials, curricular time for EE, and a focus on all goals of EE from awareness to action, environmental education efforts will not be effective. Without overcoming these barriers, EE attempts will not result in an environmentally literate citizenry able to make informed decisions concerning the environment and act in an environmentally responsible manner.

Purpose

This study was commissioned by the U.S. Department of State, Office of Overseas Schools and was designed to determine the status of environmental education in private American and International middle and high schools throughout Latin America and the Caribbean. This study served as a baseline needs assessment and was designed to complement a previous study of the status of EE in K-6 schools in the region. The results of the K-6 study indicated that although teachers say they value EE, they are not spending much time teaching it. A number of barriers to K-6 EE instructors were identified. Developing quality regional EE curricula and offering teacher workshops or classes in environmental education methods were expressed as mechanisms to improve K-6 teacher comfort levels for infusing EE in subject areas other than science. The study attempted to determine if Grade 7-12 teachers share the same views and concerns regarding EE.

Methods and Data Sources

Study Sample

To determine the status of environmental education in private American and International middle and high schools in Latin America and the Caribbean, a comprehensive survey was developed and mailed to all 50 dues-paying member schools in the Association of American Schools of Central America, Colombia-Caribbean and Mexico (also known as the Tri-Association). Members include 17 schools in Mexico, eight schools in Colombia, four schools each in Costa Rica, Guatemala, and the Dominican Republic, three schools in Jamaica, two schools each in El Salvador, Honduras, and Venezuela, and one school each in Nicaragua, Haiti, Ecuador, and Panama. About half of these schools are "American" schools using U.S.-based curricula and the other half are "International" schools with ties to a British, German, French, or other European country's curriculum. A survey and cover letter was mailed to the director of

each school. School directors were asked to distribute the surveys to all of their teachers and submit a collated summary of mean responses. Data were analyzed using schools (not individual teachers) as the unit of analysis. Schools were given six weeks to respond to the survey. Twenty-one of the schools completed the survey (a 42% response rate).

Study Instrument

The survey consisted of both fixed response and open-ended items (see Appendix A). The first part contained 21 multiple choice items focusing on aspects such as the amount of time spent on environmental education (EE), the subjects in which environmental education is addressed, places for EE infusion, teacher comfort levels with EE, teacher training in EE, and perceptions regarding the quality of EE teaching and existing school-based environmental education programs, resources, and materials. The second part of the survey contained 11 open-ended items focusing on teacher, student, and community perceptions regarding the most important environmental issues, definitions of environmental education, types of activities included in existing EE curricula, official school or national EE policies, types of EE curricula currently used, and the most significant barriers to EE. Respondents were invited to include additional written comments as well.

Results

Teacher Turnover

Since teacher turnover is a major issue in both public and private schools in Latin America, the first item on the survey asked about the average length of time middle and high school teachers stay at each school. About 28% of the teachers in these schools stay 4-6 years while slightly more (36%) stay 2-4 years. Only about 20% of teachers stay more than six years and 16% stay less than two years. It is important to note that the most highly educated teachers,

especially those from the United States, Canada and other developed countries, stay four years or less while the vast majority of local-hire teachers stay six years or longer.

Time Spent on Environmental Education

Since the expectations and activities vary so greatly between middle/junior high (Grades 7-9) and high school (Grades 10-12) classes in overseas schools, questions regarding the amount of time spent on EE were divided for these two groups. Each group first indicated the average amount of time currently spent on EE at their school each week and then indicated how much time they thought should be spent on EE at their school each week (See Figures 1 and 2 for a summary of responses to survey questions 2-5).

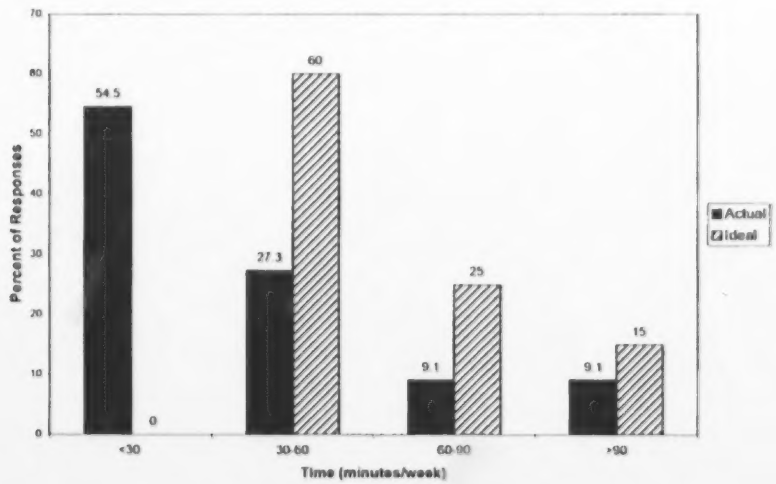

Figure 1. Average Amount of Time Spent on EE Per Week in Middle School

In both grade level groups, more than half of the respondents spend less than 30 minutes on environmental education each week. This translates into less than one "lesson" per week, a relatively small amount of time. As expected, both grade level groups think more time should be spent on EE than is currently being spent and all respondents think EE should be addressed at

least 30-60 minutes per week. It is also encouraging to note that some respondents think EE should be addressed more than 90 minutes each week.

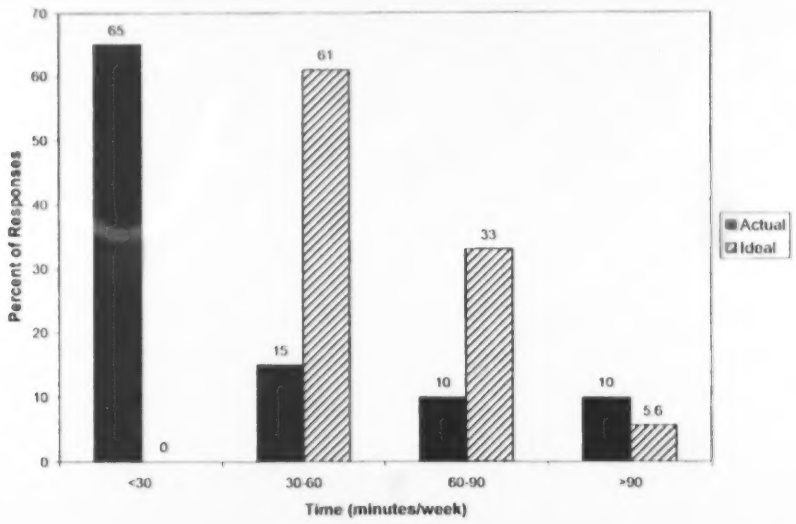

Figure 2. Average Amount of Time Spent on EE Per Week in High School

Length of Environmental Education Lessons

Respondents were asked what they thought was the ideal length of a middle and high school level environmental education "lesson" (survey questions 9-10). Most middle school teachers (66.7%) thought lessons should be 30-45 minutes long, while another 23.8% thought 45-60 minutes was optimum. Only a few (9.5%) thought lessons should be longer than 60 minutes. No middle school teachers thought that lessons should be less than 30 minutes. Almost half of the high school teachers (42.1%) thought lessons should be 30-45 minutes long, while another 42.1% thought 45-60 minutes was optimum. Only a few (15.8%) thought lessons should be longer than 60 minutes. No high school teachers thought that lessons should be less than 30 minutes. Based on the results of this survey, it appears that most middle and high school

students in private Latin American schools experience at least one complete 30-45 minute environmental education "lesson" each week.

Quality of Existing Environmental Education Programs

In question 6, respondents were asked to indicate their perceptions regarding the quality of middle and high school level environmental education programs currently offered at their schools. Response choices ranged from poor to excellent (See Figure 3).

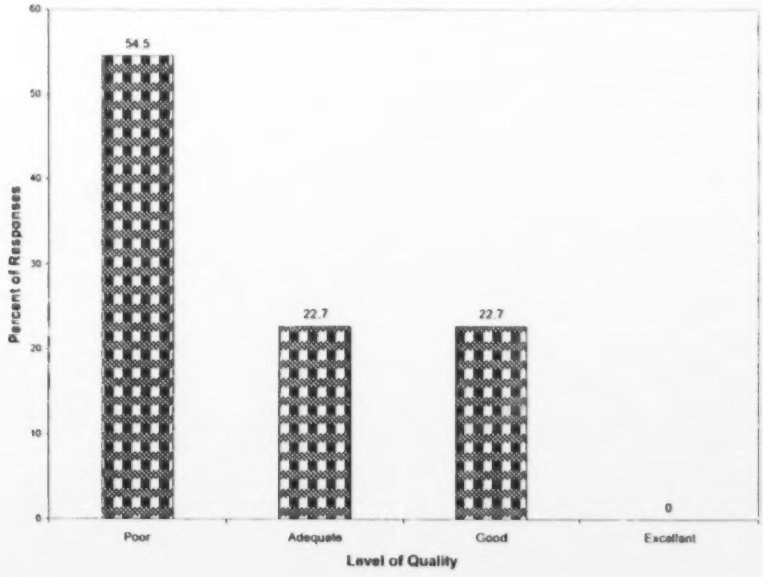

Figure 3. Quality of Existing EE Programs

More than half of the teachers (54.5%) believe that the quality of their schools' EE programs is poor, 22.7% believe it is adequate, 22.7% believe it is good, and no teachers believe it is excellent. Additional questions asked respondents to indicate their perceptions regarding specific aspects of their school's environmental education program, including access to high quality EE curricula and teaching resources, the quality of EE library and audiovisual materials at their schools, and the availability of natural outdoor instructional areas (questions 7, 8, and 11). Responses to these questions indicate that very few teachers are pleased with the quality of

EE curricula and library and audiovisual materials available to them. Respondents do feel slightly more positive about the quality of audiovisual and library materials than they do about their access to quality EE curriculum resources. It is distressing to note that more than half of the respondents believe they have poor access to quality EE curricula. Obviously, it is difficult to develop effective school-based EE programs without a solid base of exemplary curriculum resources. Responses to the question about outdoor availability of instructional areas were also troubling. Only about one third (38.1%) of the schools in the survey do have access to high quality natural outdoor instructional areas.

Question 15 asked teachers to indicate how useful they thought a regional middle and high school level EE curriculum would be. Over half of the respondents (57.1%) thought such a curriculum would be of great use, 28.6% felt it would be fairly useful, and 14.3% felt it would be of some use. No schools felt a regional EE curriculum was not needed. When asked what language they thought the curriculum should be written in, 42.9% wanted it in both Spanish and English, 57.1% wanted it only in English, and no teachers wanted it only in Spanish. It is important to note that English is the language of instruction in most American and International schools in Latin America since students eventually hope to attend English-speaking universities in developed countries upon graduation.

Grade Levels and Subjects Including Environmental Education

Questions 16, 17, and 19 asked respondents to indicate what subjects at their schools currently include EE and what grade levels they thought should include at least some EE (See Table 1). Respondents were also asked whether they thought EE should be integrated across several different subjects or presented as a separate subject (question 18). Responses indicate that all teachers believe EE should be taught at all grade levels 7-12. In addition, most teachers

(76.2%) believe EE should be integrated across several different subject areas while less than 10% believe it should be taught as a separate subject. Fourteen percent thought it should be both integrated across subjects and taught as a separate subject. Environmental education is most often included in middle and high school science and social studies classes. The potential for increasing an EE focus in these schools is especially great for mathematics classes, since there is virtually no EE currently occurring in these classes, especially at the middle school level.

Table 1. Percentage of Subjects That Currently Include EE in Middle and High Schools

Subject	Middle School (%)	High School (%)
Science	29	29
Social Studies	24	26
Art	11	11
Health	10	10
Reading-Language Arts (English)	10	8
Foreign Language	8	6
Physical Education	5	5
Music/Drama	3	3
Mathematics	0	2

Teacher Comfort Levels

Questions 12 and 13 asked respondents to indicate how comfortable they felt about their background knowledge regarding environmental concepts and issues and how comfortable they felt dealing with potentially controversial EE issues such as human population growth. Regarding perceived background knowledge, almost half of the respondents (42.9%) felt

somewhat comfortable, while 38.1% percent felt very comfortable. Only 19% felt uncomfortable with their level of EE background knowledge. When asked how comfortable they felt dealing with potentially controversial EE issues with their middle and high school students, 52.4% said they felt very comfortable, 33.3% felt somewhat comfortable, and 14.3% felt uncomfortable. Another item asked teachers how comfortable they felt dealing with parental concerns associated with their coverage of controversial environmental issues in middle and high school classes (question 14). The vast majority of teachers felt very comfortable (42.9%) to somewhat comfortable (33.3%) dealing with parental concerns. Twenty-four percent of teachers felt uncomfortable dealing with parental concerns.

Desire for Inservice Training in Environmental Education

Question 20 asked teachers if they thought EE inservice opportunities should be available at their schools. All of the teachers responded yes. Obviously, inservice training opportunities are generally viewed as a viable tool for improving the quality of school-based EE programs. Such training opportunities could familiarize teachers with new EE curricular resources and help teachers learn how to infuse EE throughout all subjects, not just science and social studies. Inservice training could also provide teachers with more environmental knowledge, thus increasing comfort and confidence levels.

Perceptions Regarding Environmental Issues

Additional open-ended survey items with especially interesting results were those that asked teachers, students, and community members to list their perceptions regarding the three most pressing environmental issues (See Figures 4, 5, and 6). For teachers, pollution ranked as the number one environmental issue, followed by overpopulation. Topics of least concern to teachers included deforestation and endangered species. These rankings parallel those cited in

the 1975 annual review, where overpopulation and hunger, pollution, and resource use ranked as the top three environmental issues. Although pollution also ranked as the number one environmental issue on the student list, water quality, waste disposal, and recycling ranked second. Topics of less concern for students included overpopulation and global warming. For community members, pollution issues also ranked as the number one issue of concern. Other relatively important issues for community members included water quality, waste disposal, and air quality. Issues like recycling and water supply were topics of least concern for community members.

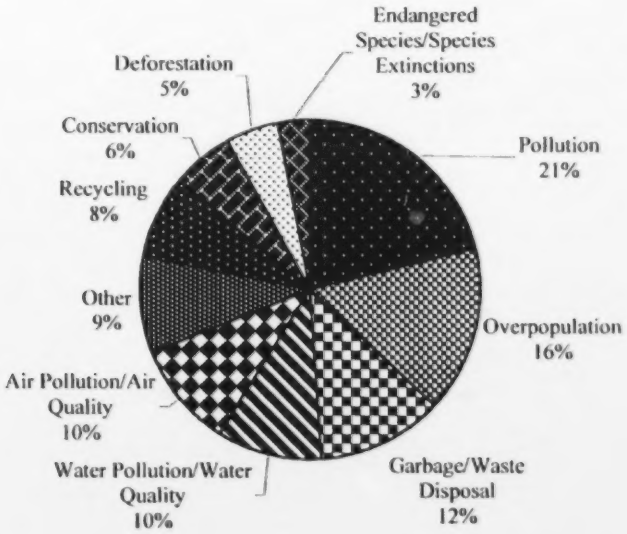

Figure 4. Top 3 Teacher Environmental Issues

Interestingly, although scientists throughout the world affirm the view that human population growth is the most significant environmental issue facing the world today, neither middle or high school students nor community members in Latin America view this as an important issue. In this survey, even middle and high school teachers do not seem to perceive

the importance of human population growth as an environmental issue. All three groups (teachers, students, and community members) are most concerned about pollution, an issue that affects them directly and is most easily visible.

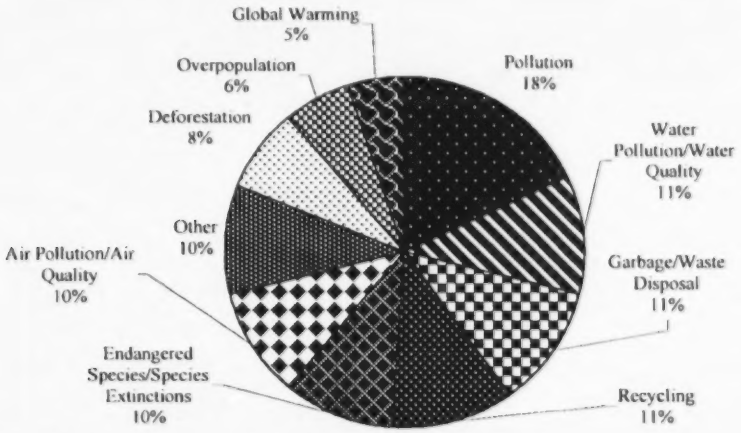

Figure 5. Top 3 Student Environmental Issues

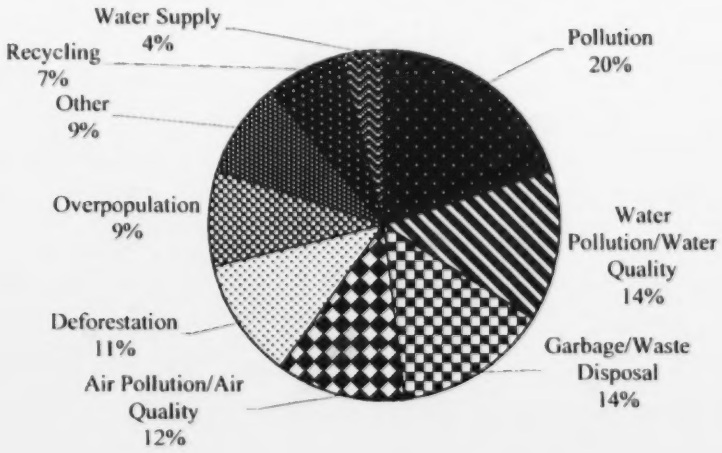

Figure 6. Top 3 Community Issues

Definition of EE, Controversial EE Topics, EE Activities and Policies

Additional open-ended questions asked teachers to state their definition of EE, identify environmental issues/topics should not be addressed in school, identify activities that should be included in the EE curriculum, and describe official school or national policies regarding EE. As a result of the 1977 Tbilisi Intergovernmental Conference on Environmental Education, the widely accepted definition of environmental education includes a focus on awareness, knowledge, attitudes, problem solving skills, and action. The components most cited in teacher definitions of environmental education in this survey were awareness statements such as "awareness of caring for the environment" and "awareness of the world." Although environmental education has been defined as a lifelong process aimed at developing the understanding, skill, attitudes and values necessary for citizens to acquire a pro-environmental ethic (Pace, 1997), only two of the teachers defined environmental education as "a process" or "an educational process."

Hudson (2001) mentioned that environmental education can and must lead from awareness to action. In this study, 22% of the teachers defined EE as awareness, only 15% included an action component in their definition of EE, 12% defined EE as understanding, and 12% included some mention of problem solving skills. The "best" definition of EE given by one teacher was: "An education process that promotes among students/adult citizens the awareness and understanding of the environment, all relationship to it and the action necessary to preserve the health of the biosphere." It is evident that middle and high school teachers in Latin American do not have a firm grip on the definition of EE. Several of the teachers only included one or two of the five components of EE in their definitions such as "increasing students' awareness of the need to preserve resources for survival" and "education that focuses on understanding and

preserving the natural environment." Two teachers did not respond to the question, and interestingly one of teachers gave a response for this question as "N/A."

Interestingly, none of the 21 respondents included a mention of the affective domain (attitudes/values) in their definitions of environmental education. Iozzi (1989a, 1989b) suggested that environmental education focused on affective learning should be incorporated into curricula at all educational levels. In addition, Hudson (2001) mentioned that environmental educators should embrace the need for action as a particular strength of environmental education, but in this study only 15% of the teachers mentioned action in their EE definitions. Another definition of EE given by a teacher in this survey was "A process that aims to develop student concern about the environmental and all problems which gives students knowledge, skills, the desire and commitment to work to solve problems of the environment."

This teacher reported active participation in an environmental education committee at her school and her definition indicates she has some knowledge about the components of environmental education. On the other hand, the same teacher mentioned in the survey that she does not feel totally comfortable about her background knowledge regarding environmental concepts and issues. She also feels somewhat uncomfortable dealing with potential parental concerns regarding her coverage of controversial issues with her middle and high school students. Interestingly, she is the only teacher out of 21 who reported a 'lack of teacher interest' as the most important barrier and a ' lack of teacher confidence to teach outdoors' as the second most important barrier limiting the effectiveness of the middle and high school environmental education program at her school. She also listed 'too much pressure to address other curricular areas, such as language arts and math' as the least significant barrier to EE. These results reveal that teachers who are highly knowledgeable about environmental education and have the

opportunity to create environmental education programs at their schools have different perspectives regarding potential barriers that limit the effectiveness of middle and high school environmental education.

According to the survey responses, 10 teachers thought there were no environmental issues/topics that should not be addressed in school and nine of them did not respond. As far as what activities the teachers thought should be included in the EE curriculum, 18% said labs, another 18% said fieldwork, and 17% said debates/discussions. Other suggested activities were interactions with other people like handing out a survey, community service, interviews, experts/speakers, and activities such as recycling experiments, water testing, air testing, art, films/videos, hands-on activities, writing/poetry/song, Internet investigations, reading environmental articles, and problem solving.

The teachers indicated that 27% of their schools have no formal EE school policy and 20% reported no national EE laws or polices. Another 20% do have formal EE school policies and 17% reported having national EE laws or policies. All teachers in countries with a national EE policies indicated that this requires environmental education in all schools. However, they report no monitoring of this policy. These results indicate that having a national law or policy is not a guarantee that EE will take place in schools. Only one teacher defined their national environmental education policy clearly. Others gave broad explanations.

Curricula/Programs/Resources and Barriers to EE

Further questions asked the teachers to describe current EE programs at their schools, explain what they do in EE at their school, the current EE resources and curricula they use, and what barriers to EE they face. Fourteen percent stated that EE at their school was teacher dependent, 15% said that it was part of the science curriculum, and only 9% described EE at

their school as integrated (see Figure 7). Regarding EE activities at their schools, the most frequently mentioned activities were percentage recycling (11%) or providing opportunities for student activities or projects (11%) (See Figure 8).

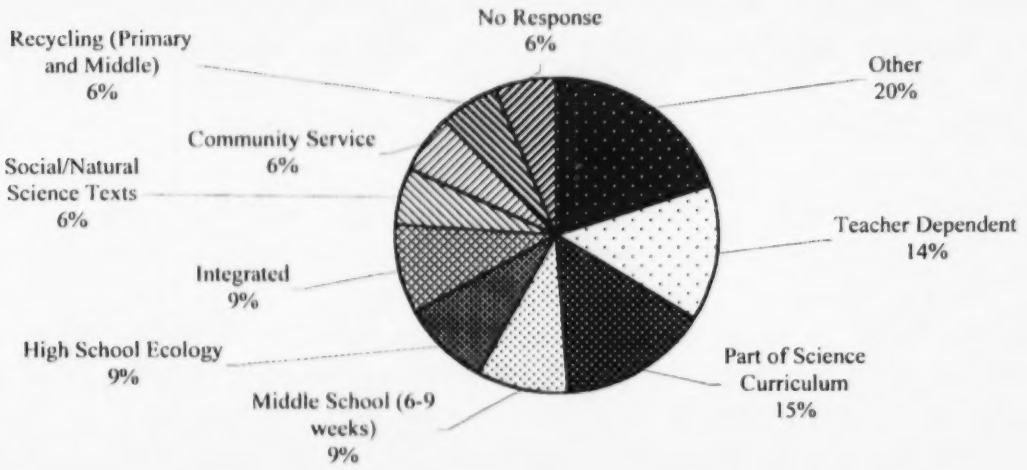

Figure 7. Current EE Programs at Schools

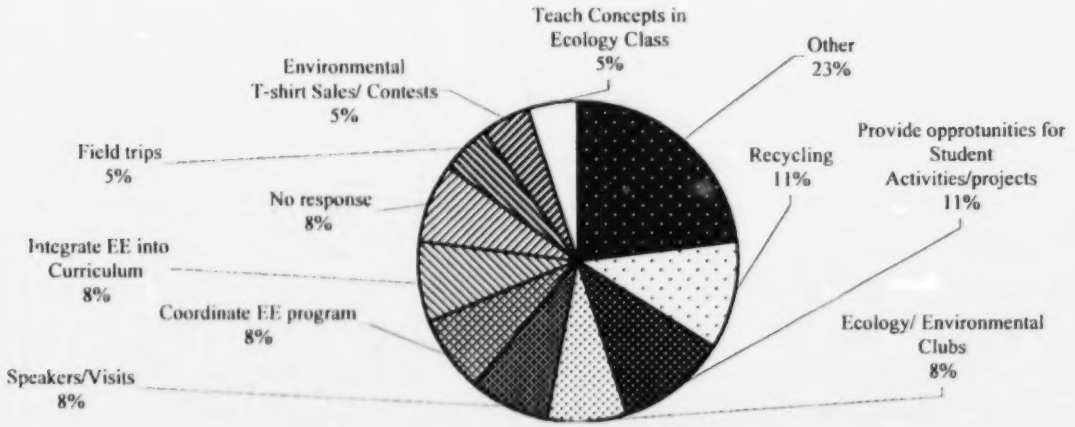

Figure 8. What participants do in EE at their Schools

Some of the teachers stated that they use Ranger Rick (13%) or government curricula (7%) in EE. Eight teachers out of 21 reported that more than four different environmental education curricula/resources. Four teachers did not respond to this questions and one teacher mention that they do not currently use any environmental curricula/resources (See Figure 9).

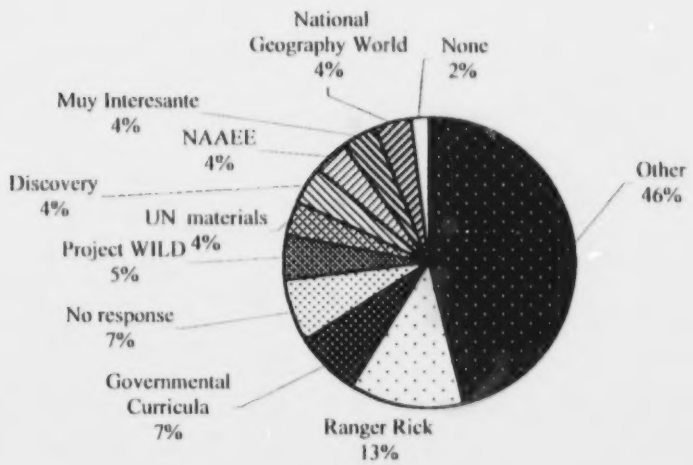

Figure 9. EE Curricula and Resources Currently Used

Ham and Sewing (1988) categorized barriers to environmental education into four broad groups: conceptual barriers, logistical barriers, educational barriers, and attitudinal barriers. The six most significant barriers to EE identified by teachers in this study were lack of time to implement activities, too much pressure to address other curricular areas, a lack of time to plan activities, a lack of available EE curricula and/or teaching resources, a lack of teacher knowledge of EE topics and issues, and a lack of locally relevant EE curricula (See Table 2). Most of these identified barriers can be classified as logistical barriers.

The least significant barriers to EE identified by teachers in this study were lack of accessible natural outdoor area on campus, lack of student interest and lack of administrative support.

Table 2. Barriers to Effective EE in Grade 7-12 Latin American Schools

Barrier	**Rank Order** 1 = Most significant barrier 13= Least significant barrier
Lack of time to implement activities	2.81
Too much pressure to address other curr. areas	3.48
Lack of time to plan activities	4.95
Lack of available EE curricula/teaching resources	5.00
Lack of teacher knowledge regarding EE topics/issues	5.43
Lack of locally relevant EE curricula	5.57
Lack of teacher confidence w/ controversial env. topics	6.86
Lack of teacher interest	7.19
Lack of teacher confidence to teach outdoors	7.24
Lack of funds to purchase needed supplies	7.57
Lack of accessible natural outdoor area on campus	8.86
Lack of student interest	8.95
Lack of administrative support	9.86

Discussions and Implications

Analyses of survey results indicate that even in the best situations in Latin America, EE is being hindered by a lack of access to quality, regional environmental education curricula and associated support materials. Numerous teacher misconceptions exist regarding the definition, purpose, and role of environmental education in the middle and high school curriculum.

Like teachers in other parts of the world, teachers in Latin American private schools think more time should be spent on environmental education, but they cite a variety of factors limiting their ability to improve the quality of school-based EE programs. Lack of access to quality EE curriculum resources appears to be a critical limiting factor, accompanied by lack of access to quality outdoor instructional areas in many school sites. Access to EE audiovisual and library resources does not seem to be as much of a problem. These results are supported by the research of Robertson and Krugly-Smolska (1997) in which teachers in Canada indicated time and resource constraints as the most important logistical barrier to environmental education. Time was also cited as a significant constraint to teaching EE in a study by Brown and Blank (2001) focusing on middle and high school teachers in the United States and Hungary.

Respondents to this survey clearly indicate a desire for the development of an EE curriculum designed specifically for their region, ideally written in both Spanish and English. In keeping with current philosophies regarding the niche of EE in formal education systems, responses to this survey indicate that infusion across a variety of subject areas is preferred over insertion of EE as a separate course. Responses to this survey are also consistent with current views that EE should span ALL grade levels, K-college. Results of this survey regarding preferred subject areas for inclusion of EE parallel those from U.S.-based surveys of public school teachers. In her survey of K-12 school teachers in the United States, Wade (1996) reported that EE is most often taught in science classes.

Sadly, both U.S. and Latin American teachers both appear to share the widely-held misconception that environmental education is science education. These survey results parallel those of Lane, Wilke, Champeau and Sivek (1994) who reported that many teachers do not

implement EE lessons because they do not see the relatedness of these lessons to subjects other than science and social studies.

Interestingly, although scientists throughout the world affirm the view that human population growth is the most significant environmental issue facing the world today, neither middle or high school students nor community members in Latin America view this as an important issue. In this survey, even middle and high school teachers do not seem to perceive the importance of human population growth as an environmental issue. All three groups (teachers, students, and community members) are most concerned about pollution, an issue that affects them most directly and is most easily visible.

Most teachers felt at least somewhat comfortable in their background knowledge of EE, felt very comfortable dealing with potentially controversial EE issues with their middle and high school students, felt very to somewhat comfortable dealing with parental concerns associated with their coverage of controversial environmental issues in their middle and high school classes, and felt that there were no environmental issues or topics that should not be addressed in school.

Teachers also indicated that 27% of the schools have no EE policy, 20% have no national EE laws or policies, 20% have an EE school policy, and 17% have national EE laws or policies. Teachers described their EE school programs as mostly teacher dependent and part of the science curriculum. Most teachers participate in recycling programs or offer opportunities for student activities or projects at their schools, and most use either Ranger Rick or government EE curricula. A lack of time to implement activities, too much pressure to address other curricular areas, a lack of time to plan activities, a lack of available EE curricula and/or teaching resources, a lack of teacher knowledge of EE topics and issues, and a lack of locally relevant EE curricula were identified by teachers as the six most significant barriers to EE.

Summary and Recommendations

Although teachers responding to this survey would like to spend more time on EE, they are spending much less time than they would like, which parallels a study by Brown and Blank (2001). In their study, middle and high school teachers in the U.S. and Hungary reported spending less time on EE than they would like. Developing quality regional EE curricula, as well as offering teacher workshops and/or classes in environmental education methods would improve teacher comfort with infusing EE in subject areas other than science. Research has shown that when pre-service EE preparation is mandated, as it is in Wisconsin, teachers receive more EE preparation and as a result implement more EE, have more positive attitudes toward EE, and are more confident about teaching EE than teachers in states where EE preparation is not mandated (Plevyak, L.H., Bendixen-Noe, M., Henderson, J., Roth, R.E., & Wilke, R., 2001). Therefore, it is important that teachers receive EE preservice training and follow up EE inservice training for the successful implementation of EE in schools (Plevyak, et al., 2001).

The findings of this study are significant because they represent the first comprehensive study of the status of environmental education in the most academically rigorous middle and high schools in Latin America. Typically, key government officials and major business owners in Latin American countries send their children to American and International schools because they want their children to have access to an American or European college before they return to their home country to work. Because the future decision-makers and sources of power and authority in Latin American countries attend these private schools, an understanding of the emphasis such schools place on environmental education is essential.

Literature Cited

Arias-La Forgia, A. (1994). *Environmental education in the school systems of Latin America and the Caribbean, Working Papers 4*. Washington, D.C.: U.S. Agency for International Development.

Brown, F. & Blank, L. (2001). Bridging environmental education trans-atlantic: An American and Hungarian teacher in-service project. *Environmental Education and Information, 20*, 77-92.

Bynoe, P. & Hale, W. (1997). An analysis of environmental education provision in a sample of Caribbean National Environmental Action Plans (NEAPs). *Environmental Education Research, 3*, 59-68.

Ham, S. & Castillo, L. (1990). Elementary schools in rural Honduras problems in exporting environmental education models from the United States. *Journal of Environmental Education, 21*, 27-32.

Ham, S. & Sewing, D. (1988). Barriers to environmental education. *Journal Environmental Education, 19*, 17-24.

Holtz, R.E. (1996). Environmental education: A state survey. *Journal of Environmental Education, 27*, 9-11.

Houstou, H.P. (1998). Reorienting environmental education for sustainable development in teacher education: Constraints and opportunities in Latin America. *Environmental Education and Information, 17*, 137-146.

Hudson, S.J. (2001). Challenges for Environmental education: Issues and ideas for the 21st century. *Bioscience, 51*, 283-288.

Hungerford, H., Peyton, R.B., & Wilke, R.J. (1980). Goals for curriculum development in Environmental education. *Journal of Environmental Education, 11*, 42-47.

Iozzi, L.A. (1989a). What research says to the educator. Part one: Environmental education and the affective domain. *Journal of Environmental Education, 20*, 3-9.

Iozzi, L.A. (1989b). What research says to the educator. Part two: Environmental education and the affective domain. *Journal of Environmental Education, 20*, 6-13.

Kidron, M. & Segal, R. (1991). *The new state of the world atlas*. New York, NY: Simon and Schuster, Inc.

Knapp, D. (2000). The Thessaloniki Declaration: A wake-up call for environmental education. *Journal of Environmental Education, 31*, 32-39.

Lane, R., Wilke, R., Champeau, R., & Sivek, D. (1994). Environmental education in Wisconsin: A teacher survey. *Journal of Environmental Education, 25*, 9-17.

Littledyke, M. (1997). Science Education for Environmental Education? Primary Teacher Perspectives and Practices. *British Educational Research Journal, 23*, 641-659.

Marshall, A. (Ed.). (1993). *The State of the World Population*. New York, NY: United Nations Population Fund.

McKeown-Ice, R. (2000). Environmental Education in the United States: A Survey of Preservice Teacher Education Programs. *Journal of Environmental Education 32*, 4-11.

Pace, P. (1997). Environmental Education in Malta: trends and challenges. *Environmental Education Research, 3*, 69-81.

Plevyak, L.H., Bendixen-Noe, M., Henderson, J., Roth, R.E., & Wilke, R. (2001). Level of teacher preparation and implementation of EE: Mandated and non-mandated EE teacher preparation states. *Journal of Environmental Education, 3*, 28-36.

Ramsey, J.M., Hungerford, H.R., & Volk, T.L. (1992). Environmental Education in the K-12 Curriculum: Finding A Niche. *Journal of Environmental Education, 23*, 35-45.

Robertson, C.L. & Krugly-Smolska, E. (1997). Gaps between Advocated Practices and Teaching Realities in Environmental Education. *Environmental Education Research, 3*,11-326.

Ruskey, A., Wilke, R., & Beasley, T. (2001). A survey of the status of state level environmental education in the United States. *Journal of Environmental Education, 32*, 4-14.

Smith-Sebasto, N.J. & Smith, T.L. (1997). Environmental Education in Illinois and Wisconsin: A Tale of Two State. *Journal of Environmental Education, 28*, 26-36.

Summers, M., Kruger, C., Childs, A., & Mant, J. (2000). Primary School Teachers' Understanding of Environmental Issues: an interview study. *Environmental Education Research, 6*, 293-312.

Trends in Environmental Education. (1977). UNESCO Commission.

Wade, K.S. (1996). EE Teacher Inservice Education: The Need for New Perspectives. *Journal of Environmental Education, 27*, 11-17.

UNESCO's list of documents and publications. (1994). Vol 1-3, Computerized Doc. System, Information of Library and Archives Division.

UNESCO's list of documents and publications. (1995). Vol 1-3, Computerized

Doc. System, Information of Library and Archives Division.

United Nations Environment Programme. (1975). Annual Review, Printed by UNEP.

APPENDIX A
ENVIRONMENTAL EDUCATION SURVEY
(Middle and High School)

Name_____ School_____

Part I. MULTIPLE CHOICE. Please write the letter most closely matching your views in the blank to the left of each statement.

_____ 1. What is the average length of time teachers stay at your school?

a. 0-2 years
b. 2-4 years
c. 4-6 years
d. more than 6 years

_____ 2. What is the average amount of time currently spent on environmental education in the middle grades at your school?

a. less than 30 minutes per week
b. 30-60 minutes per week
c. 60-90 minutes per week
d. more than 90 minutes per week

_____ 3. How much time do you think should be spent on environmental education in the middle grades at your school?

a. less than 30 minutes per week
b. 30-60 minutes per week
c. 60-90 minutes per week
d. more than 90 minutes per week

_____ 4. What is the average amount of time currently spent on environmental education in the high school at your school?

a. less than 30 minutes per week
b. 30-60 minutes per week
c. 60-90 minutes per week
d. more than 90 minutes per week

_____ 5. How much time do you think should be spent on environmental education in your high school?

a. less than 30 minutes per week
b. 30-60 minutes per week
c. 60-90 minutes per week
d. more than 90 minutes per week

_____ 6. What is your perception regarding the quality of environmental education currently occurring at your school?

a. poor
b. adequate
c. good
d. exceptional

_____ 7. What is your perception regarding current access to high quality middle and high school environmental education curricula and teaching resources at your school?

a. little or no curricula/resources available
b. adequate supply of curricula/resources
c. good supply of curricula/resources
d. excellent supply of curricula/resources

_____ 8. What is your perception regarding the quality of middle and high school library and audiovisual environmental education materials at your school?

a. little or no library/AV materials
b. adequate supply of library/AV materials
c. good supply of library/AV materials
d. excellent supply of library/AV materials

_____ 9. What do you think would be the ideal length of a middle school environmental education lesson?

a. less than 30 minutes
b. 30-45 minutes
c. 45-60 minutes
d. more than 60 minutes

_____ 10. What do you think would be the ideal length of a high school environmental education lesson?

a. less than 30 minutes
b. 30-45 minutes
c. 45-60 minutes
d. more than 60 minutes

_____ 11. What is your perception regarding the availability of natural outdoor instructional areas at your school?

a. excellent natural outdoor areas
b. adequate natural outdoor areas
c. minimal natural outdoor areas
d. no natural outdoor areas

_____ 12. How comfortable do you feel about your background knowledge regarding environmental concepts and issues?

a. very comfortable
b. somewhat comfortable
c. somewhat uncomfortable
d. very uncomfortable

_____ 13. How comfortable do you feel dealing with potentially controversial environmental issues, such as human population, with your middle or high school students?

a. very comfortable
b. somewhat comfortable
c. somewhat uncomfortable
d. very uncomfortable

_____ 14. How comfortable do you feel dealing with potential parental concerns regarding your coverage of controversial environmental issues with your middle or high school students?

a. very comfortable
b. somewhat comfortable
c. somewhat uncomfortable
d. very uncomfortable

_____ 15. How useful do you think a middle or high school environmental education curriculum developed specifically for our region would be?

a. little or no use
b. some use
c. fair amount of use
d. great use

16. Circle all of the middle school subjects at your school that currently include environmental education.

a. science
b. social studies
c. reading/language arts (English)
d. foreign language
e. art
f. health
g. physical education
h. mathematics
i. music/drama

17. Circle all of the high school subjects at your school that currently include environmental education.

a. science
b. social studies
c. reading/language arts (English)
d. foreign language
e. art
f. health
g. physical education
h. mathematics
i. music/drama

_____ 18. At the middle and high school levels, do you think environmental education should be integrated across several different subject areas or should it be presented as a separate subject?

a. integrated
b. separate subject

19. Circle all of the grade levels you think should include at least some environmental education.

a. Grade 7
b. Grade 8
c. Grade 9
d. Grade 10
e. Grade 11
f. Grade 12

_____ 20. Do you think inservice opportunities regarding the use of the new environmental education curriculum should be available to teachers at your school?

a. yes
b. no

_____ 21. In what language do you think the environmental education curriculum should be written?

a. English
b. Spanish

PART 2. OPEN-ENDED ITEMS. Please answer each question in the blanks provided.

1. What do YOU consider to be the three most important environmental topics/issues today?

2. What do you think YOUR STUDENTS consider to be the three most important environmental topics/issues today?

3. What do you think YOUR LOCAL COMMUNITY considers to be the three most important environmental topics/issues today?

4. What is your definition of environmental education?

5. Are there any environmental issues/topics you think should NOT be addressed in middle or high school? If so, what are they?

6. What kinds of activities (labs, debates, field work, etc.) do you think should be included in a middle and high school environmental education curriculum?

7. Is there any "official" school or national policy regarding environmental education in your area? If so, briefly describe these policies.

8. Briefly describe the current middle and high school environmental education program at your school, if any.

9. Briefly describe what you personally do in the area of environmental education at your school.

10. Please list the environmental education curricula/resources (such as Project WILD, Ranger Rick's Naturescope) you currently use.

11. Please rank-order the following list of barriers limiting the effectiveness of middle and high school environmental education at your school. (1 = most significant barrier, 13 = least significant barrier)

_____ not enough time to plan activities
_____ not enough time to actually implement activities
_____ lack of teacher knowledge regarding environmental topics/issues
_____ lack of available environmental education curricula/teaching resources
_____ lack of locally relevant environmental education curricula
_____ too much pressure to address other curricular areas, such as language arts and math
_____ lack of teacher confidence to deal with potentially controversial environmental topics
_____ lack of teacher confidence to teach outdoors
_____ lack of an accessible natural outdoor area on campus
_____ lack of administrative support
_____ lack of student interest
_____ lack of teacher interest
_____ lack of funds to purchase needed supplies

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